

CLAIMS

Please cancel without prejudice claims 24-26.

1. (Original) An imaging apparatus comprising: an image sensor including: a plurality of color sensor arrays individually comprising a plurality of sensors configured to provide image data for a plurality of pixels of a respective color component at an initial resolution; and wherein the plurality of color sensor arrays overlap and are offset with respect to one another to define a plurality of sub-pixels for individual ones of the pixels; and processing circuitry configured to access the image data for at least one pixel from each of the plurality of color sensor arrays, and using the accessed image data, to determine sub-pixel image data for the respective sub-pixels to form an image of an increased resolution compared with the initial resolution of the color sensor arrays.

2. (Original) The imaging apparatus of claim 1, wherein the arrays comprise a plurality of photodetectors at individual pixels to detect respective color components of light.

3. (Original) The imaging apparatus of claim 1, wherein each of the sub-pixels comprise red, green, and blue color components, and the plurality of color sensor arrays comprise red, blue, and green color sensor arrays.

4. (Original) The imaging apparatus of claim 3, wherein overlapping of the red, green, and blue color sensor arrays enables determination of the image data at an increased number of physical locations within the individual ones of the pixels to create an image of a higher resolution at a sub-pixel level.

5. (Original) The imaging apparatus of claim 1, wherein the increased resolution image is created by determining sub-pixel image data for individual pixels using the image data from each of the plurality of color sensor arrays.

6. (Original) The imaging apparatus of claim 1, wherein the offsetting of the color sensor arrays is performed by physically shifting the plurality of color sensor arrays in a desired direction.

7. (Original) The imaging apparatus of claim 1, wherein the offsetting of the color sensor arrays is performed by using an optical device.

8. (Original) The imaging apparatus of claim 7, wherein the optical device is a prism.

9. (Original) The imaging apparatus of claim 7, wherein the optical device is a lens.

10. (Original) An imaging apparatus comprising: an image sensing means including: a plurality of color sensor arrays, individual sensor arrays comprising a plurality of sensor means for providing image data for a plurality of pixels of a respective color component at an initial resolution; wherein individual ones of the sensor means are arranged in a layered stack for individually detecting red, green, and blue components of light, respectively; wherein the plurality of sensor means of respective color sensor arrays are arranged in an offset relationship with respect to one another for defining a plurality of

sub-pixels for individual ones of the pixels; and processing means for accessing the image data for at least one pixel from each of the plurality of color sensor arrays, and using the accessed image data, to form an image of an increased resolution compared with the initial resolution of the color sensor arrays.

11. (Original) The imaging apparatus of claim 10, wherein the offset is achieved by physically shifting layers of the sensor means.

12. (Original) The imaging apparatus of claim 10, wherein the offset is achieved by using an optical device.

13. (Original) The imaging apparatus of claim 12, wherein the optical device is a prism.

14. (Original) The imaging apparatus of claim 12, wherein the optical device is a lens.

15. (Original) The imaging apparatus of claim 10, wherein the sensor means are offset in a depthwise direction with respect to a direction of received light.

16. (Original) The imaging apparatus of claim 10, wherein the processing means comprises means for determining the sub-pixel image data for the respective sub-pixels of an individual pixel using the accessed image data of the respective individual pixel, and the processing means further comprises means for forming an image of the increased resolution.

17. (Original) An image data processing method comprising: providing image data using, an image sensor, and the providing comprising: configuring a plurality of color sensor arrays to overlap one another in an offset relationship to define a plurality of sub-pixels for individual ones of a plurality of pixels, wherein individual color sensor arrays comprise a plurality of sensor elements configured to provide the image data for the plurality of pixels of a respective color component at an initial resolution; accessing the image data for at least one pixel from each of the plurality of color sensor arrays; and forming an image having an increased resolution compared with the initial resolution of the color sensor arrays using the accessed image data.

18. (Original) The method of claim 17, wherein the forming comprises: determining sub-pixel image data from the accessed image data, and using the sub-pixel image data to form the image having increased resolution.

19. (Original) The method of claim 17, wherein the image having increased resolution is formed at a sub-pixel level.

20. (Original) The method of claim 17, wherein the offset is performed by using an optical device.

21. (Original) The method of claim 20, wherein the optical device is a prism.

22. (Original) The method of claim 20, wherein the optical device is a lens.

23. (Original) The method of claim 17, wherein the offset is achieved by physically shifting sensor elements of individual ones of color sensor arrays at individual pixel locations of the color sensor arrays.

24. (Cancelled).

25. (Cancelled).

26. (Cancelled).

27. (Original) An article of manufacture comprising: a processor-usable medium comprising processor-usable code configured to cause processing circuitry to: access image data for at least one pixel from each of a plurality of color sensor arrays at an initial resolution; and form an image of increased resolution, compared with the initial resolution of individual ones of the color sensor arrays, using the accessed image data, wherein the color sensor arrays are offset with respect to one another providing a plurality of image data values for at least one color component for a single pixel location.